



# Brickhouse Environmental

**POST-CLOSURE ASSESSMENT  
SAMPLING PLAN AND QUALITY ASSURANCE PROJECT PLAN  
CITY OF NEWARK TRANSFER STATION  
OLD SOUTH CHAPEL STREET  
NEWARK, DELAWARE  
DNREC FACILITY ID: SW-04/05**

**PREPARED FOR:**

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DELAWARE DEPARTMENT OF NATURAL RESOURCES AND  
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SOLID AND HAZARDOUS WASTE MANAGEMENT SECTION  
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**JUNE 20, 2014**

**BE PROJECT No. 14-3106-0**

**PREPARED BY:**

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## **I. PROJECT SCOPE**

This combined Sampling Plan and Quality Assurance Project Plan (QAPP) has been prepared to outline the proposed sampling and analytical work associated with the closure of the City of Newark – Solid Waste Transfer Station Facility (the Site). The Site is located along the west side of Old South Chapel Street in Newark, Delaware and is permitted under the Solid and Hazardous Waste Management Section of the Delaware Department of Natural Resources and Environmental Control (DNREC) (Permit No. SW-04/05). Section II provides a brief operational site history and description.

On behalf of the City of Newark (City), Johnson, Mirmiran & Thompson, Inc. (JMT) submitted a Notice of Intent to Close letter and Closure Plan, dated April 30, 2014, for the closure of the Site. In a letter dated May 23, 2014, DNREC responded to the Closure Plan requiring that a site-specific sampling plan be prepared, approved by DNREC, and implemented to determine if the Site's use as a solid waste transfer station has impacted environmental media at the Site. This plan has been prepared by Brickhouse Environmental in consultation with JMT as their subcontractor to plan and perform this assessment and it includes the following elements:

- Site History and Description.
- Specific environmental media sampling procedures, locations, and anticipated depths.
- Laboratory methods, matrices and minimum detection limits.
- Quality assurance/quality control samples.
- Turnaround time, chain of custody and reporting requirements.

## **II. SITE HISTORY AND DESCRIPTION**

The City's Department of Public Works and Water Resources is responsible for collection and disposal of all solid wastes within City limits. Until recently, the City collected the waste and delivered this waste to the City's transfer station. At this station, the trucks dumped their waste into a large hopper where the waste was further compacted before being loaded onto a larger tractor-trailer for permanent disposal at a solid waste landfill (Figure 1).

Located on a three acre site on Old South Chapel Street, the transfer station operated from the mid-1970s until the City decided to cease operation in September 2013. During this time, the station received wastes generated by residents, businesses and commercial industries located within City limits. No known hazardous wastes were received by the station during its operation.



The transfer station contains electric, potable water, storm and sanitary sewer utilities in various degrees of operation as shown on Figure 1. Utility poles and overhead wires were used to provide electrical power to the station. A 1-inch service lateral from a 6-inch water main provides water to the transfer station through a bib connection on the north side of the Site. As a result of the hauling, compacting, and distribution of waste with varying degrees of materials and pollutants, the on-site storm water system was connected to the 14-inch gravity sanitary sewer interceptor located on the western edge of the transfer station facility.

The necessary equipment used to carry out the station's operations remain at the Site. The trash compactor consists of a steel superstructure, hopper, and hydraulic ram. Prior to the demolition of the trash compactor, the demolition contractor will drain all hydraulic fluid and properly dispose of oil and hoses. The long term use of this compactor allows for the possibility of oils and leachate to discharge to the ground surface. With long term storage of the vehicles, there is a possibility of oil leakage. There is a drive-on scale located in the eastern section of the transfer station. Located at-grade, the working components of the scale extend into a 4-foot deep concrete pit. An 8-foot by 16-foot shed located adjacent to the trash compactor, served as an office for the transfer station operators.

The following Site features allowed for easy and safe transportation throughout the Site. The Site contains an asphalt roadway which allows access from the street, and movement throughout the facility. Retaining walls consisting of sheet metal were installed to elevate the dump site. Additionally, guard rails were installed on the edges around the dumping area.

### **III. DATA QUALITY OBJECTIVES**

All soil/groundwater samples collected during the course of this investigation will be analyzed by ESC Lab Sciences (ESC) of Mt. Juliet, Tennessee. Samples will be analyzed by approved Solid Waste/EPA Methods specified in Table 1. Reporting limits shall meet the Delaware's Default Background Remediation Standards and Uniform Risk-Based Remediation Standards for unrestricted use. Method detection limits must be at or lower than these respective standards.

### **IV. LABORATORY CERTIFICATION**

ESC is a National Environmental Laboratory Accreditation Program (NELAP) certified environmental laboratory. They will be coordinating the requested sample analysis for this soil and groundwater sampling program.



**Laboratory Contact:**

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**V. PROJECT COORDINATION**

This project is being coordinated out of Brickhouse Environmental's West Chester, Pennsylvania office in consultation with JMT. All laboratory analysis-related correspondence and analytical results should be directed to the personnel listed below. Sampling activities and quality assurance /quality control (QA/QC) measures are also being coordinated by Brickhouse Environmental. Mr. Alan Harvill (contact information listed above) at ESC is coordinating the laboratory support efforts including sample management and analytical QA/QC.

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**VI. ANALYTICAL METHODS / QUALITY ASSURANCE SUMMARY TABLE****TABLE 1****ANALYTICAL METHODS/QUALITY ASSURANCE SUMMARY TABLE  
CITY OF NEWARK SOLID WASTE TRANSFER STATION (SW-04/05)  
BE PROJECT NO. 14-3106-0**

Matrix Type	No. of Samples	Analytical Parameters	Analytical Methods	Preservatives	Bottleware
Soil	4	PPL VOCs, PPL SVOCs, PPL Metals, TPH DRO/GRO, pH, PCBs, Pesticides	EPA Methods 8260B, 8270C, 6010B/7471A, 9045D, 8081B, 8082	MeOH, DI	40 mL vials, 4 oz glass jars
Ground Water	1	PPL VOCs, PPL SVOCs, PPL Metals, TPH DRO/GRO, pH, PCBs, Pesticides	EPA Methods 8260B, 8270C, 6010B/7471A, 9045D, 8081B, 8082	HCl, HNO3	40 mL vials, 250 mL plastic, 1 L ambers
DI Water	1	PPL VOCs	EPA 8260B	HCl	40 mL vials

**VII. SAMPLE LOCATION SELECTION**

Brickhouse Environmental reviewed the Site operational history and specifics as provided by JMT. This information was used in conjunction with the identified areas of interest described in DNREC's May 23, 2014 letter to select sampling locations. The areas of interest listed in DNREC's letter include the flowing:

- 1) The tipping area and the western most side slope to the road below.
- 2) The areas beneath the mechanical compactor equipment.
- 3) The area where the transfer vehicles were staged.
- 4) Any areas where the sanitary or storm sewer catch basins had the potential to receive leachate and/or hydraulic fluids from the operation of the facility.

Brickhouse Environmental prepared a proposed soil boring location map in consultation with JMT based on the Site operations, site-specific topography/drainage patterns, and the locations of stormwater management structures. The proposed sample locations are illustrated on the attached Figure 1. Field conditions encountered during the investigation may require the location and number of soil borings to be altered. Eleven soil borings are currently proposed.

**VIII. SAMPLE COLLECTION METHODS**

Soil samples will be collected via soil borings using a direct push Geoprobe machine. Brickhouse Environmental will provide a qualified field geoscientist to direct the soil borings



operations. All field activities will be overseen by a Delaware licensed professional geologist. Soil core samples will be collected on a continuous basis from each boring. Samples will be field screened for evidence of environmental impact both visually and with a calibrated photo-ionization detector (PID) to identify the possible presence of volatile organic vapors associated with petroleum products or other regulated Volatile Organic Compounds (VOCs). Borings will be advanced to a depth of 4 feet, Geoprobe refusal, or to just below the depth of any suspected impacts observed, whichever is first encountered.

Depending on the specific area of concern and field screening, representative samples will be preserved as required by the laboratory method, placed in laboratory prepared bottleware, and submitted under proper chain of custody documentation to the analytical laboratory for quantitative analysis of the specific regulated substances of concern. Samples will be analyzed for Priority Pollutant List (PPL), PPL VOCs, PPL Semi-Volatile Organic Compounds (SVOCs), PCBs, pesticides, PPL metals, pH, and total petroleum hydrocarbons diesel and gasoline range organics (TPH-DRO, TPH-GRO). Four soil samples are proposed for laboratory analysis. If groundwater is encountered, one representative grab water sample will be collected for analysis of PPL VOCs, PPL SVOCs, PPL metals, PCBs, pesticides, pH, and TPH-DRO/GRO. Groundwater samples for metals analyses will be field filtered with a disposable 0.45um filter. Additional soil and/or groundwater samples may be collected if warranted by the conditions observed during the investigation.

Decontamination of all drilling and sampling equipment will occur prior to deployment. Decontamination procedures will consist of a phosphate free detergent followed by a triple tap water and triple de-ionized water rinse.

All borings will be backfilled the same day. Cuttings derived from the borings will be placed back in the borehole upon completion of sampling. Borings advanced through concrete or asphalt will be repaired with ready mix concrete or cold patch asphalt.

## **IX. INSTRUMENT CALIBRATION**

Laboratory equipment calibration will be documented in the laboratory data package. Field meters will be calibrated prior to use during each sampling day and more frequently if recommended by the manufacturer.

## **X. QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)**

One filed QA/QC sample is requested with this sampling event consisting of a trip blank. The trip blank is a sample filled with de-ionized water in the laboratory and accompanies the samples throughout the sampling event. The trip blank sample is analyzed for the same VOCs as the original samples and is used to indicate whether samples may have come into contact with other contaminants during the sampling event.



Split samples with other parties are not anticipated.

## **XI. CHAIN OF CUSTODY AND BOTTLE PREPARATION**

The laboratory will initiate chain of custody documentation during bottle preparation at the laboratory. The custody documentation will accompany the bottles as they are delivered to Brickhouse Environmental personnel, who will maintain documented custody of the sample bottles during storage and sample collection. Custody will be transferred back to the laboratory personnel at the time of sample receipt. The laboratory will equip Brickhouse Environmental with appropriate chain of custody documentation and bottleware for this sampling event.

## **XII. LABORATORY STORAGE**

The laboratory will internally log the samples upon their receipt from Brickhouse Environmental, and ensure that the resultant sample log-in sheets conform to the Sampling and Analysis Plan for this project. A copy of these sample log-in sheets are to be forwarded to Brickhouse Environmental within 48 hours after receipt of the samples.

ESC will store the samples, unused portions of the samples, and sample extracts for a period not less than 30 days after sample analysis. Storage of the samples will be conducted in accordance to ESC's internal quality assurance laboratory management plan. It is expected that all sample analysis will be performed by ESC and its subcontractors. ESC will be responsible for reanalysis of any samples which are lost, broken, altered or are analyzed past the holding time as long as the samples are received intact and within the hold time from sample collection.

## **XIII. DATA DELIVERABLE FORMAT AND SCHEDULE**

Standard Deliverables and standard turnaround time are required for this data set. Brickhouse Environmental will submit a written Sampling and Analysis Plan to the environmental laboratory at least 1 week prior to sampling. All samples will be collected during the single day field investigation. Samples will be stored at Brickhouse Environmental's office in a sample storage refrigerator maintained at 4°C. The laboratory will provide courier service to collect the samples from Brickhouse Environmental the day following sampling and transport samples to the laboratory the same or next day. Analytical results will be emailed to the Sample Coordinator and Project Manager upon completion.

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## **FIGURE 1**

# **Site Layout & Proposed Boring Location Map**





- LEGEND
- BUILDING/EQUIPMENT

EDGE OF PAVEMENT

GUARD RAIL

OVERHEAD ELECTRIC

RETAINING WALL

SANITARY SEWER MANHOLE

SANITARY SEWER

STORM SEWER

STORMWATER INLET

UTILITY POLE

WATER MAIN

PROPOSED SOIL BORING

- NOTES:
1. THE LOCATION OF ALL UTILITIES SHOWN IS FOR INFORMATIONAL PURPOSES ONLY. THIS PLAN WAS CREATED BASED OFF OF LIMITED FIELD OBSERVATIONS AND AERIAL IMAGERY. A SITE SURVEY WAS NOT CONDUCTED.

2. THE BORING LOCATIONS SHOWN ON THIS MAP ARE SUBJECT TO CHANGE BASED UPON ACTUAL FIELD CONDITIONS.

3. BORING CONTRACTOR SHALL PERFORM MISS UTILITY ONE CALL BEFORE ANY SUBSURFACE INVESTIGATION IS TO BEGIN.

MISS UTILITY  
or  
DELMARVA

BEFORE YOU DIG CALL  
1-800-441-8355 (M-F, 9-5)  
1-800-441-8355 (M-F, 9-5)  
PREPARE YOUR NOTICE

PREPARED BY:

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CITY OF NEWARK

PUBLIC WORKS & WATER RESOURCES DEPARTMENT

TRANSFER STATION CLOSURE  
& DEMOLITION

SHEET TITLE:

SOIL BORING LOCATIONS

SCALE: N.T.S.

SHEET NO:

1 OF 1

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